

We Claim:

1. A process for producing a conjugated fatty acid, comprising the step of conjugating an unsaturated fatty acid having at least two double bonds, with the use of viable cells, dead cells or a cell extract of at least one bacterium having conjugation capability selected from the group consisting of *Lactobacillus oris*, *Lactobacillus pontis*, *Lactobacillus panis*, *Bifidobacterium breve*, *Bifidobacterium infantis*, *Bifidobacterium bifidum* and *Bifidobacterium pseudocatenulatum*, or an enzyme derived from the said bacterium.

2. The process according to claim 1, wherein said bacterium having conjugation capability is selected from the group consisting of *Lactobacillus oris* ATCC 49062, *Lactobacillus pontis* ATCC 51518, *Lactobacillus pontis* ATCC 51519, *Lactobacillus panis* JCM 11053, *Bifidobacterium breve* YIT 10001 (FERM BP-8205), *Bifidobacterium breve* ATCC 15698, *Bifidobacterium breve* ATCC 15701, *Bifidobacterium bifidum* YIT 4007 (FERM BP-791), *Bifidobacterium infantis* ATCC 15702 and *Bifidobacterium pseudocatenulatum* ATCC 27919.

3. The process according to claim 1, wherein said unsaturated fatty acid having at least two double bonds is an linoleic acid.

4. The process according to claim 1, comprising the steps of inoculating the bacterium having conjugation capability into a culture medium which contains the unsaturated fatty acid having at least two double bonds, and cultivating the bacterium in said culture medium.

5. The process according to claim 4, wherein a milk medium is used as the culture medium to yield a fermented milk containing a conjugated fatty acid.

6. The process according to claim 4, wherein a milk medium being free of lipid-binding proteins and surfactants is used as the culture medium to yield a fermented milk containing a conjugated fatty acid.

5 7. The process according to claim 1, wherein a bacterium being capable of converting linoleic acid into a conjugated linoleic acid is used as the bacterium having conjugation capability, said bacterium being capable of producing a conjugated linoleic acid in an amount exceeding 10, based on 100 of the substrate linoleic acid added to a culture medium, by the following steps:

10 (a) carrying out a preculture in a growth medium for at least 12 hours, the growth medium comprising a complex between linoleic acid and at least one material selected from BSA, lipid-binding proteins and surfactants; and

(b) inoculating a bacterium having conjugation capability obtained in the step (a) to a milk medium containing linoleic acid and cultivating the bacterium with shaking for a predetermined time.

15 8. A process for producing a composition of a conjugated linoleic acid enriched for the cis-9, trans-11 isomer, comprising the step of conjugating linoleic acid with the use of viable cells, dead cells or a cell extract of a bacterium having conjugation capability or an enzyme derived from the bacterium to yield a composition containing a conjugated linoleic acid,

20 wherein said bacterium having conjugation capability is selected from the group consisting of *Lactobacillus oris* ATCC 49062, *Lactobacillus pontis* ATCC 51518, *Lactobacillus pontis* ATCC 51519, *Lactobacillus panis* JCM 11053, *Bifidobacterium breve* YIT 10001 (FERM BP-8205), *Bifidobacterium breve* ATCC 15698, *Bifidobacterium breve* ATCC 15701, *Bifidobacterium bifidum* YIT 4007 (FERM BP-791), *Bifidobacterium infantis* ATCC 15702 and *Bifidobacterium pseudocatenulatum* ATCC 27919 to thereby yield a conjugated linoleic acid composition enriched for the cis-9, trans-11 isomer, in
25 which most of the conjugated linoleic acid is the cis-9, trans-11 isomer of conjugated linoleic acid.

9. Use of a bacterium in conjugation, the bacterium being capable of producing a conjugated linoleic acid in an amount exceeding 10 based on 100 of the substrate linoleic acid added to a culture medium, through the following steps:

(a) carrying out a preculture in a growth medium for at least 12 hours, the growth medium comprising a complex between linoleic acid and at least one material selected from BSA, lipid-binding proteins and surfactants; and

(b) inoculating a bacterium having conjugation capability obtained in the step (a) to a milk medium containing linoleic acid and cultivating the bacterium with shaking for a predetermined time.

10. The use of a bacterium in conjugation according to claim 9, wherein the bacterium is *Lactobacillus oris* ATCC 49062 or *Bifidobacterium breve* YIT 10001 (FERM BP-8205).

11. A food/drink containing a conjugated fatty acid produced by the process according to claim 1.